



# Parent Graphs

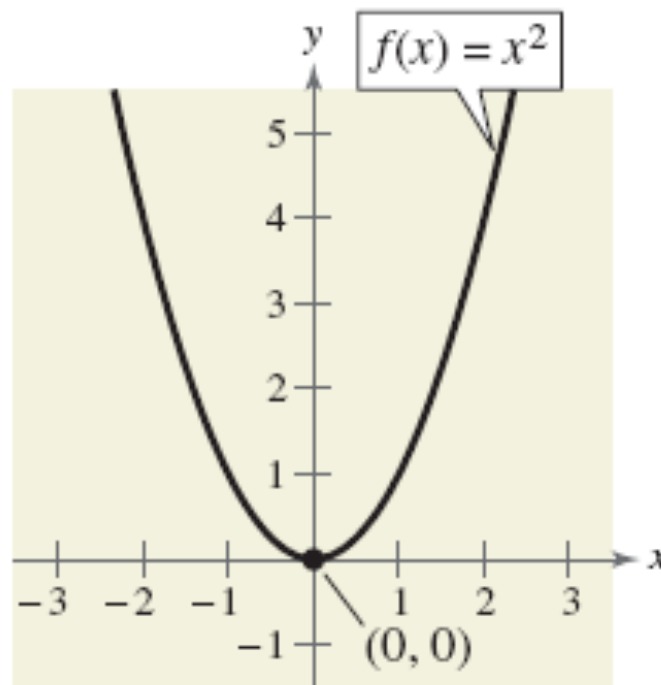
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# Square(Quadratic) Function

$$f(x) = x^2$$

$$f(x) = a(x-h)^2 + k$$

- Domain: all real numbers
- Range: all nonnegative real numbers
- Has intercept of (0,0)
- Symmetric with respect of the y-axis

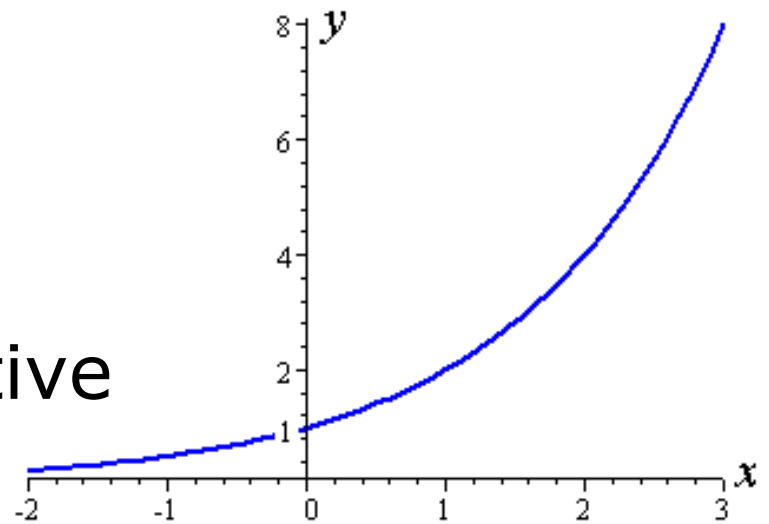


# Exponential Function

$$f(x) = b^x$$

$$f(x) = ab^{(x-h)} + k$$

- Domain: all real numbers
- Range: all nonnegative real numbers
- Has intercept of (0,1)

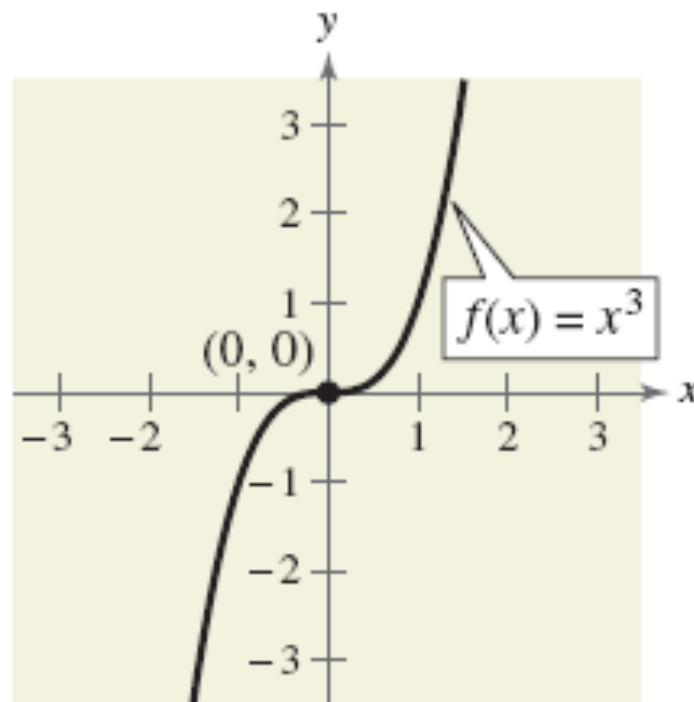


# Cubic Function

$$f(x) = x^3$$

$$f(x) = a(x-h)^3 + k$$

- Domain: all real numbers
- Range: all real numbers
- Has intercept at  $(0,0)$
- Symmetric with respect to the origin

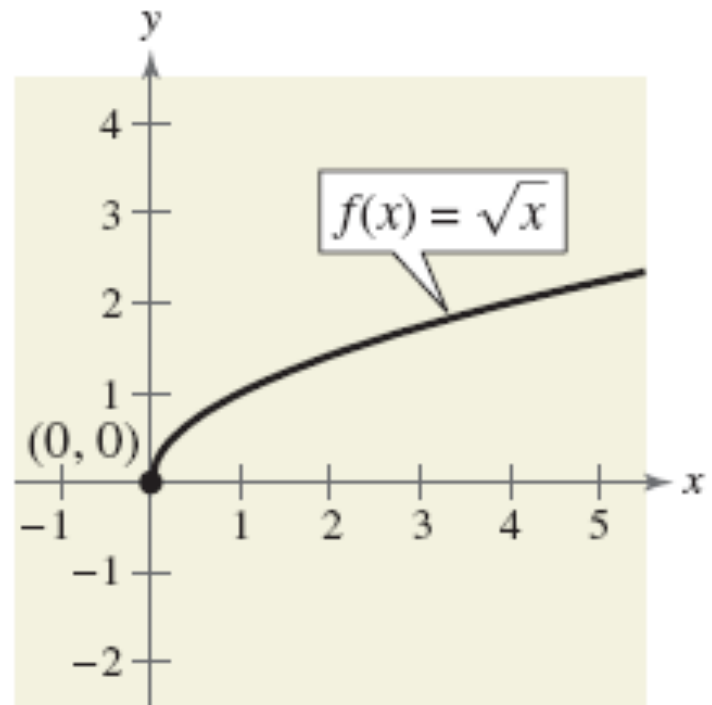


# Square Root Function

$$f(x) = \sqrt{x}$$

$$f(x) = a\sqrt{x-h} + k$$

- Domain: all nonnegative real numbers
- Range: all nonnegative real numbers
- Has intercept at  $(0,0)$

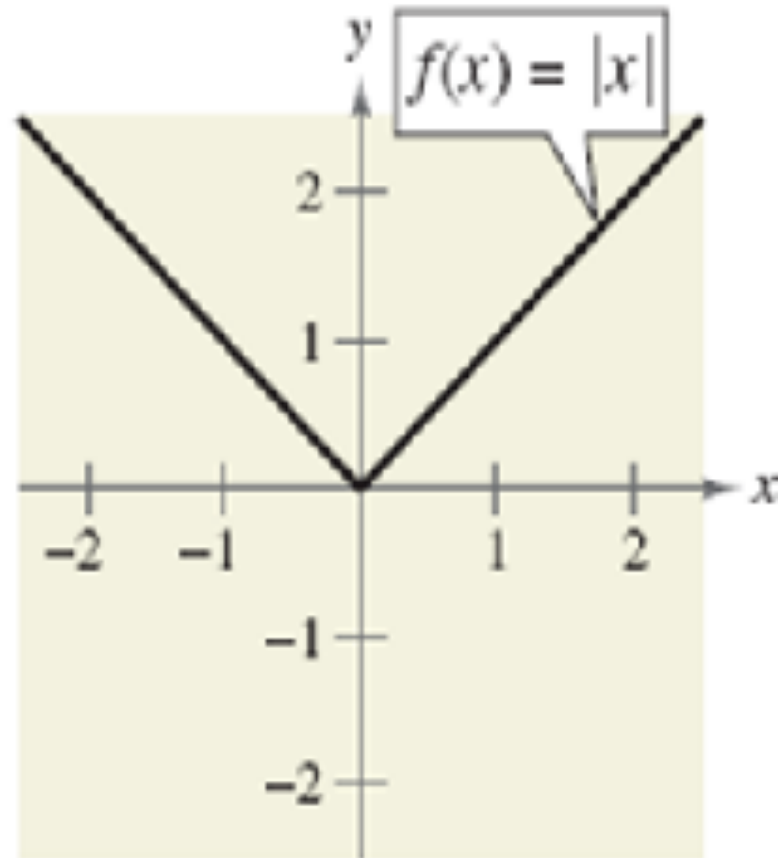


# Absolute Value Function

$$f(x) = |x|$$

$$f(x) = a|x - h| + k$$

- Domain: all real numbers
- Range: all nonnegative real numbers
- Has intercept of (0,0)
- Symmetric with respect of the y-axis



# Reciprocal Function

$$f(x) = \frac{1}{x}$$

$$f(x) = \frac{a}{(x-h)} + k$$

- Domain:  $(-\infty, 0) \cup (0, \infty)$
- Range:  $(-\infty, 0) \cup (0, \infty)$
- Has no intercepts
- Symmetric with respect to the origin

